Service Schematics







Introduction

IMPORTANT:

This document is intended for use by authorized NOKIA service centers only.

"Service Schematics" was created with focus on customer care.
The purpose of this document is to provide further technical repair information for NOKIA mobile phones on Level 3/4 service activities.
It contains additional information such as e.g. "Component finder", "Frequency band table" or "Antenna switch table".
The "Signal overview" page gives a good and fast overview about the most important signals and voltages on board.
Saving process time and improving the repair quality is the aim of this document.
It is to be used additionally to the service manual and other training or service information such as Service Bulletins.

All measurements were made using following equipment:

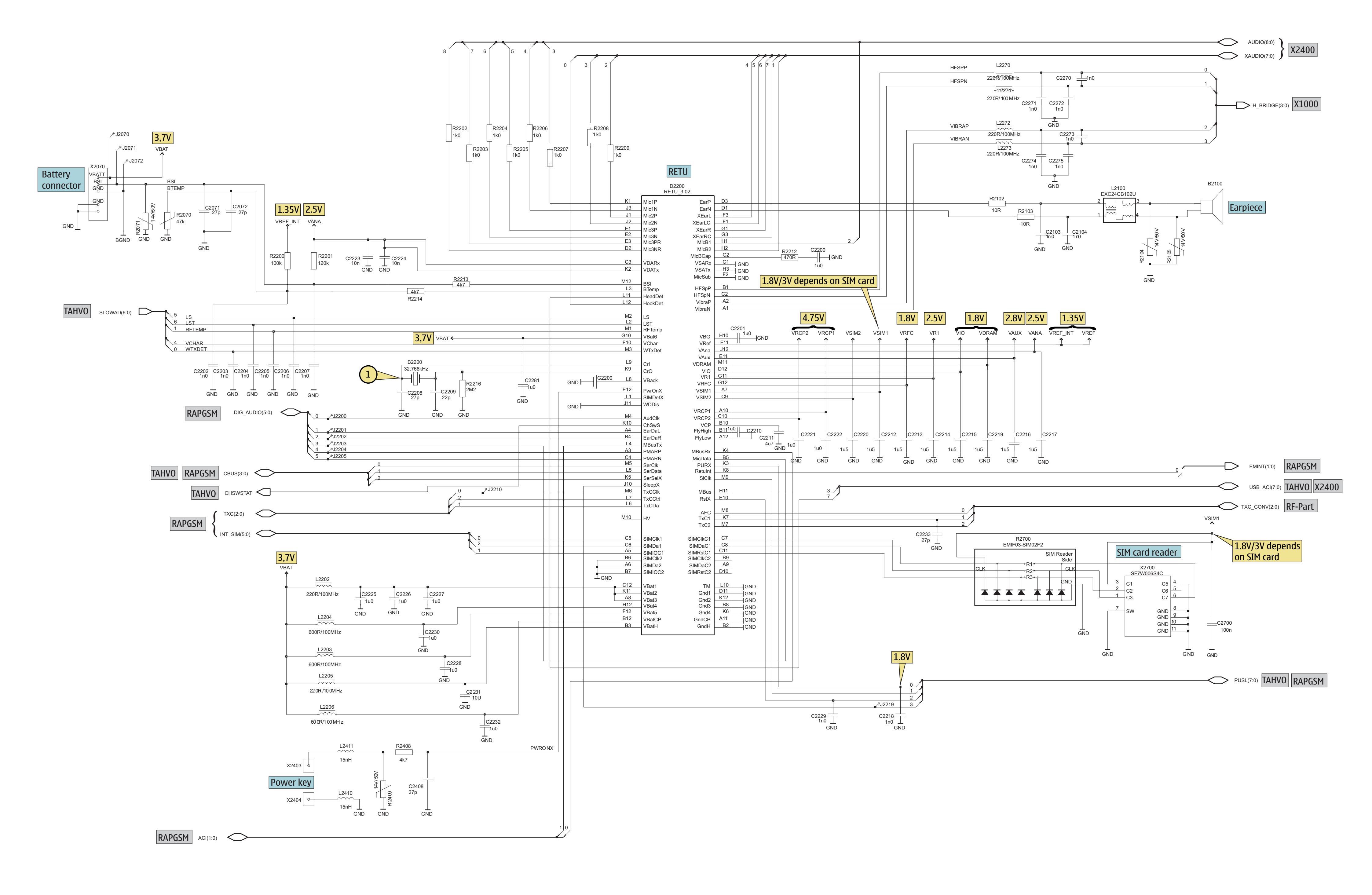
Nokia repair SW	: Phoenix version 2005.12.5.90
Oscilloscope	: Fluke PM 3380A/B
Spectrum Analyzer	: Advantest R3162 with an analog probe
RF-Generator / GSM Tester	: Rhode & Schwarz CMU 200
Multimeter	: Fluke 73 Series II

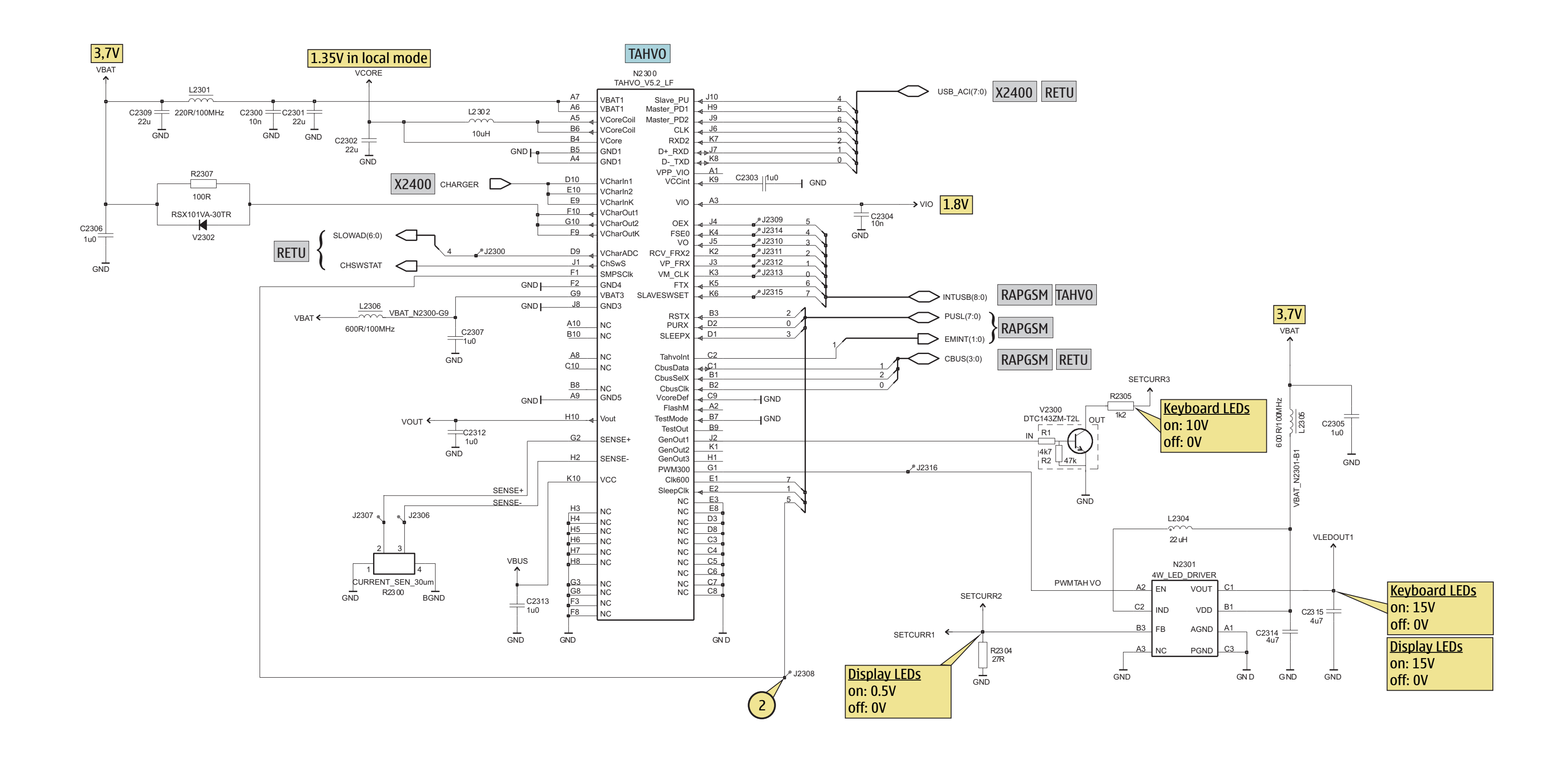
While every endeavour has been made to ensure the accuracy of this document, some errors may exist. If the reader finds any errors, NOKIA should be notified in writing.

Please send E-Mail to: training.sace@nokia.com

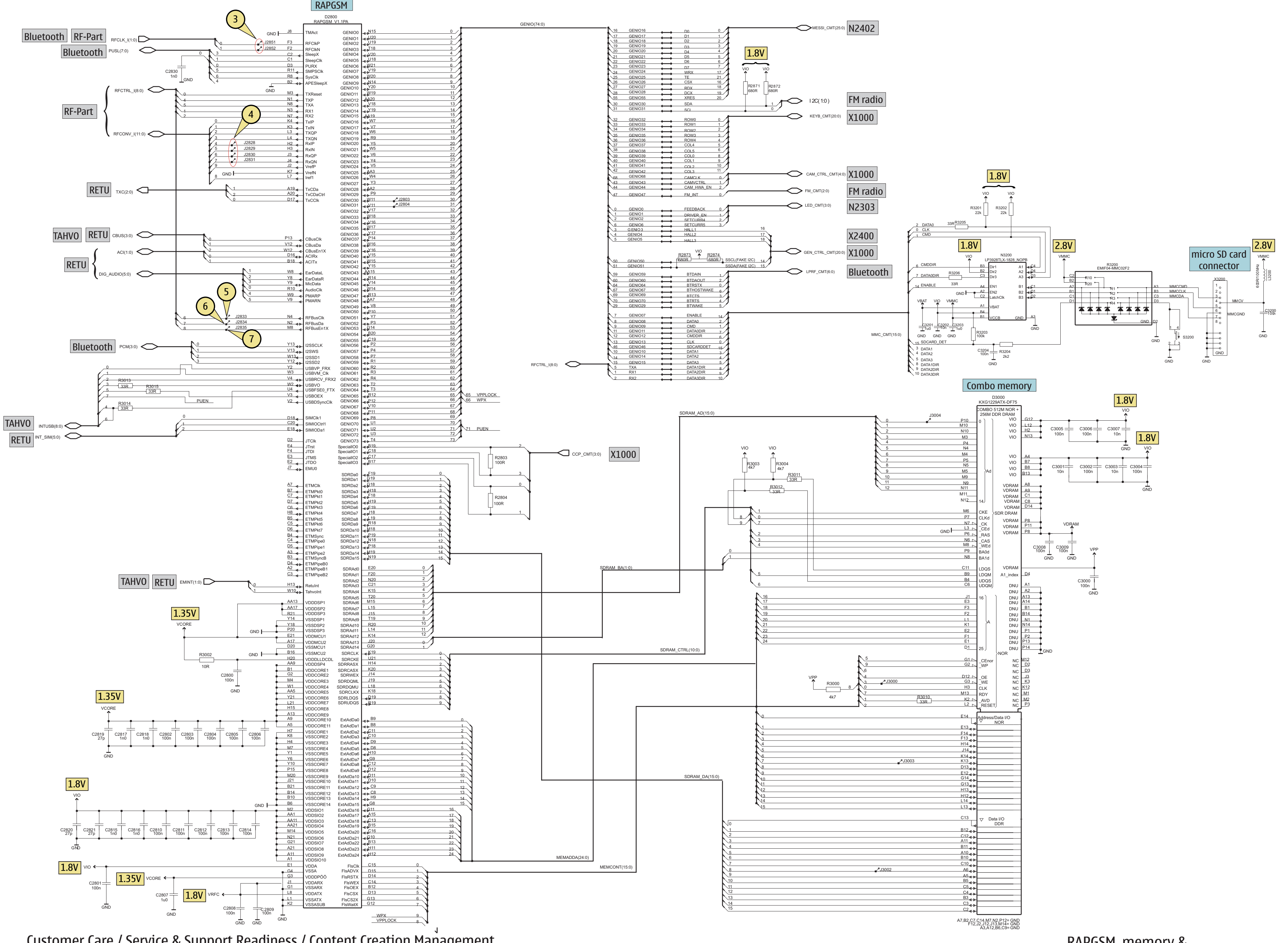
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Exploded view and component disposal

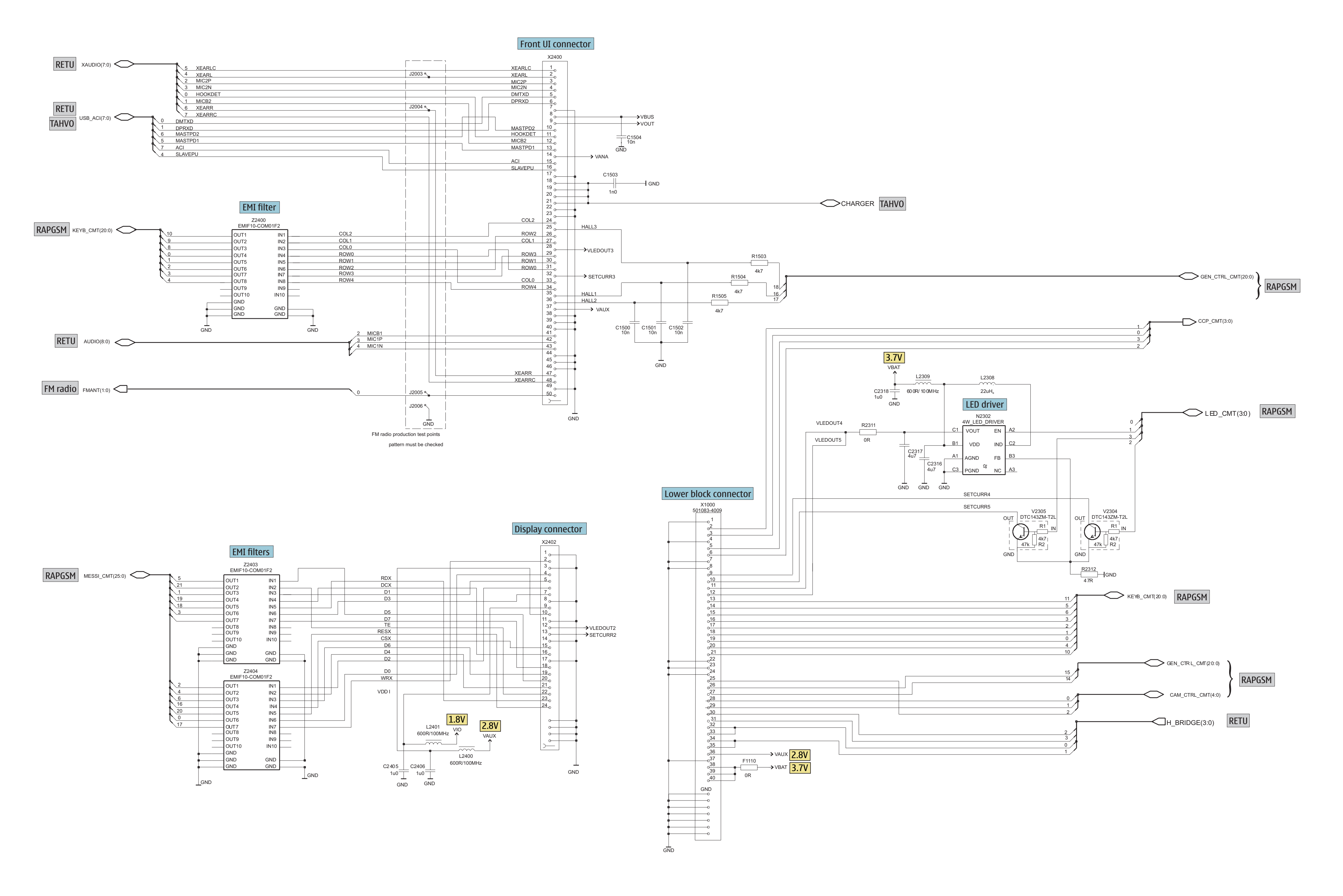

AUDIO(8:0)
XAUDIO(7:0)
X2400
HFSPP
HFSPN
L2270
220R/100MHz
L2271
220R/100MHz
C2270
1n0
C2271
1n0
C2272
1n0
H_BRIDGE(3:0)
X1000
VIBRAP
VIBRAN
L2272
220R/100MHz
L2273
220R/100MHz
C2273
1n0
C2274
1n0
C2275
1n0
GND
R2202
1k0
R2203
1k0
R2204
1k0
R2205
1k0
R2206
1k0
R2207
1k0
R2208
1k0
R2209
1k0
RETU
D2200
RETU_3.02
B2100
L2100
EXC24CB102U
R2102
10R
R2103
10R
C2103
1n0
C2104
1n0
Earpiece
R2104
R2105
14V/50V
3,7V
VBAT
J2070
J2071
J2072
X2070
VBATT
BSI
GND
BTEMP
Battery connector
BGND
R2071
R2070
47k
C2071
27p
C2072
27p
1.35V
2.5V
VREF_INT
VANA
R2200
100k
R2201
120k
C2223
10n
C2224
10n
R2213
4k7
R2214
4k7
R2212
470R
C2200
1u0
1.8V/3V depends on SIM card
TAHVO
SLOWAD(6:0)
LS
LST
RFTEMP
VCHAR
WTXDET
C2202
1n0
C2203
1n0
C2204
1n0
C2205
1n0
C2206
1n0
C2207
1n0
C2201
1u0
4.75V
1.8V
2.5V
1.8V
2.8V
2.5V
1.35V
VRCP2
VRCP1
VSIM2
VSIM1
VRFC
VR1
VIO
VDRAM
VAUX
VANA
VREF_INT
VREF
1
B2200
32.768kHz
C2208
27p
C2209
22p
R2216
2M2
C2281
1u0
G2200
RAPGSM
DIG_AUDIO(5:0)
J2200
J2201
J2202
J2203
J2204
J2205
C2210
C2211
4u7
C2221
1u0
C2222
1u0
C2220
1u5
C2212
1u5
C2213
1u5
C2214
1u5
C2215
1u5
C2219
1u5
C2216
1u5
C2217
1u5
EMINT(1:0)
RAPGSM
CBUS(3:0)
CHSWSTAT
J2210
USB_ACI(7:0)
TAHVO
X2400
TXC(2:0)
INT_SIM(5:0)
TXC_CONV(2:0)
RF-Part
C2233
27p
VSIM1
R2700
EMIF03-SIM02F2
SIM Reader Side
SIM card reader
X2700
SF7W006S4C
1.8V/3V depends on SIM card
C2700
100n
3,7V
VBAT
L2202
220R/100MHz
C2225
1u0
C2226
1u0
C2227
1u0
L2204
600R/100MHz
C2230
1u0
L2203
600R/100MHz
C2228
1u0
L2205
220R/100MHz
C2231
10U
L2206
600R/100MHz
C2232
1u0
1.8V
PUSL(7:0)
TAHVO
RAPGSM
J2219
C2229
1n0
C2218
1n0
X2403
L2411
15nH
R2408
4k7
PWRONX
C2408
27p
Power key
X2404
L2410
15nH
14V/50V
R2409
RAPGSM
ACI(1:0)

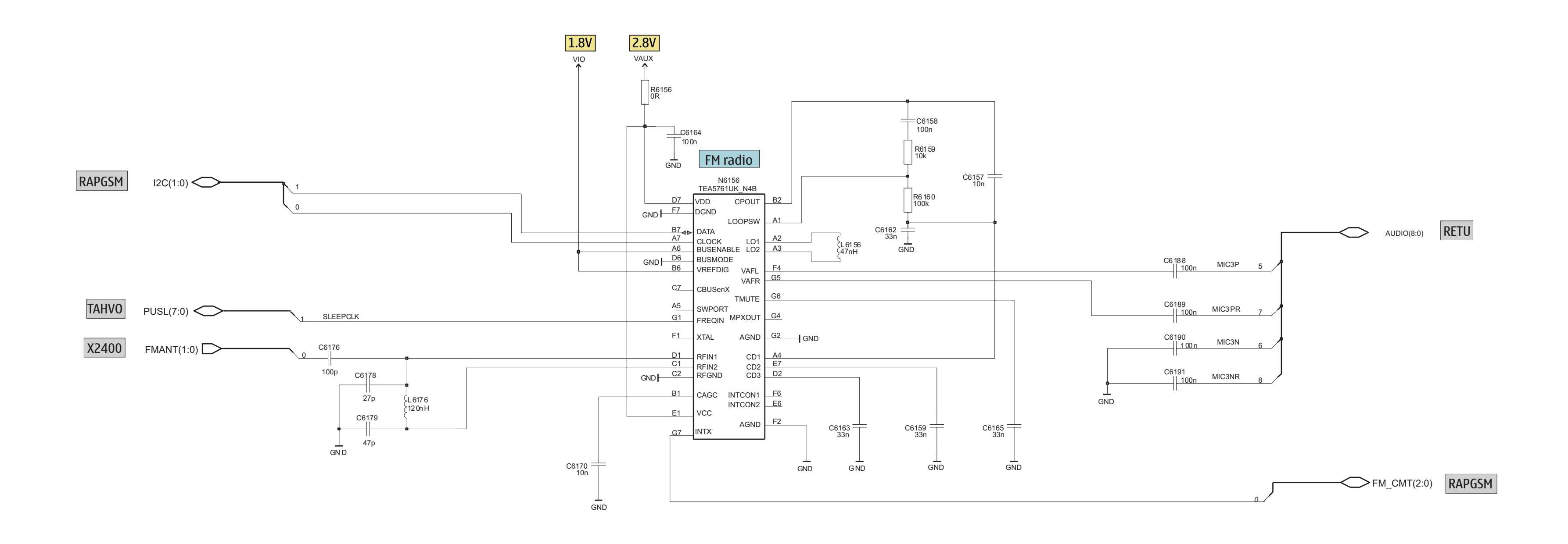


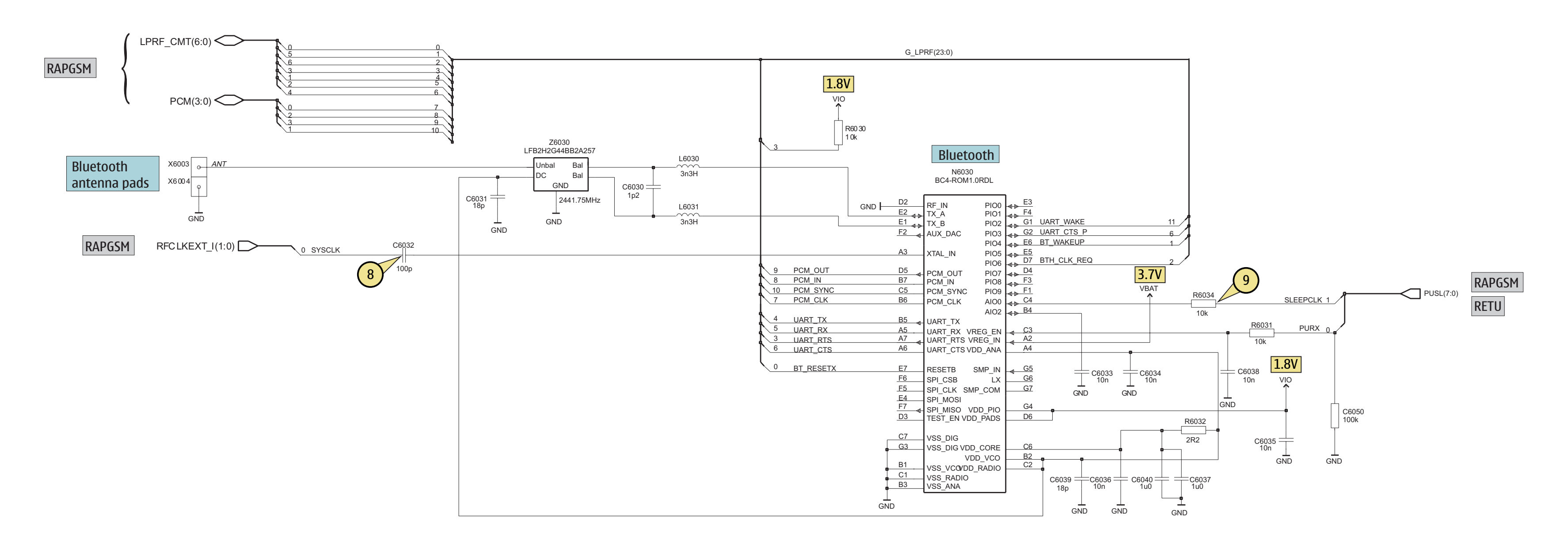
3,7V
VBAT
1.35V in local mode
VCORE
TAHVO
N2300
TAHVO_V5.2_LF
X2400
RETU
RAPGSM
CHARGER
SLOWAD(6:0)
CHSWSTAT
USB_ACI(7:0)
VIO
1.8V
INTUSB(8:0)
PUSL(7:0)
EMINT(1:0)
CBUS(3:0)
Keyboard LEDs
on: 10V
off: 0V
Keyboard LEDs
on: 15V
off: 0V
Display LEDs
on: 15V
off: 0V
Display LEDs
on: 0.5V
off: 0V
N2301
4W_LED_DRIVER
CURRENT_SEN_30um
VOUT
VBUS
SETCURR1
SETCURR2
SETCURR3
VLEDOUT1

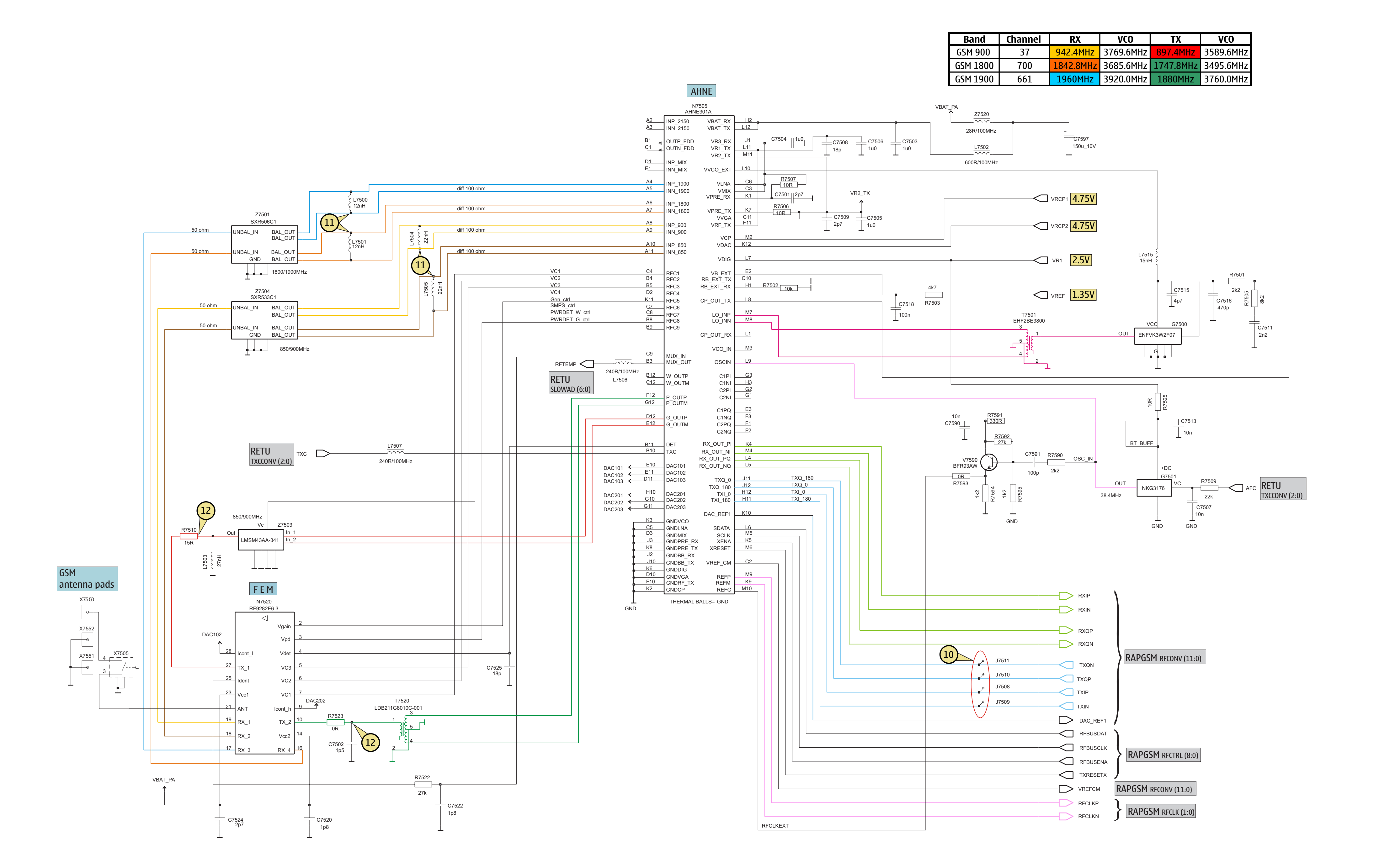


RAPGSM
D2800
RAPGSM_V1.1PA
Bluetooth
RF-Part
Bluetooth
RF-Part
RETU
TAHVO
RETU
RETU
Bluetooth
TAHVO
RETU
TAHVO
RETU
1.35V
1.35V
1.8V
1.8V
1.35V
1.8V
N2402
1.8V
FM radio
X1000
X1000
FM radio
N2303
X2400
X1000
Bluetooth
1.8V
1.8V
2.8V
micro SD card connector
2.8V
X1000
Combo memory
D3000
1.8V
1.8V
GENIO(74:0)
SDRAM_AD(15:0)
SDRAM_BA(1:0)
SDRAM_CTRL(10:0)
SDRAM_DA(15:0)
MEMADDA(24:0)
MEMCONT(15:0)

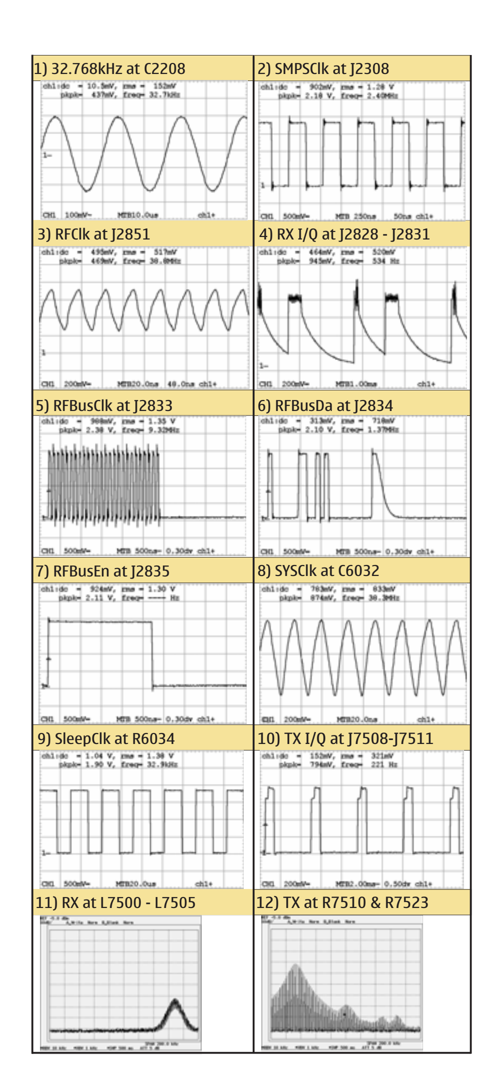

Front UI connector
X2400
EMI filter
Z2400
EMIF10-COM01F2
RETU
TAHVO
RAPGSM
FM radio
CHARGER
VBUS
VOUT
VANA
VAUX
GND
FM radio production test points
pattern must be checked
3.7V
VBAT
LED driver
N2302
4W_LED_DRIVER
Lower block connector
X1000
501083-4009
Display connector
X2402
EMI filters
Z2403
EMIF10-COM01F2
Z2404
EMIF10-COM01F2
1.8V
VIO
2.8V
VAUX
GEN_CTRL_CMT(20:0)
CCP_CMT(3:0)
LED_CMT(3:0)
KEYB_CMT(20:0)
CAM_CTRL_CMT(4:0)
H_BRIDGE(3:0)


1.8V
VIO
2.8V
VAUX
R6156
0R
C6164
100n
GND
FM radio
N6156
TEA5761UK_N4B
RAPGSM
I2C(1:0)
TAHVO
PUSL(7:0)
SLEEPCLK
X2400
FMANT(1:0)
C6176
100p
C6178
27p
L6176
120nH
C6179
47p
VDD
DGND
DATA
CLOCK
BUSENABLE
BUSMODE
VREFDIG
CBUSenX
SWPORT
FREQIN
XTAL
RFIN1
RFIN2
RFGND
CAGC
VCC
INTX
CPOUT
LOOPSW
LO1
LO2
VAFL
VAFR
TMUTE
MPXOUT
AGND
CD1
CD2
CD3
INTCON1
INTCON2
L6156
47nH
C6158
100n
R6159
10k
R6160
100k
C6162
33n
C6157
10n
C6170
10n
C6163
33n
C6159
33n
C6165
33n
RETU
AUDIO(8:0)
C6188
100n
MIC3P
C6189
100n
MIC3PR
C6190
100n
MIC3N
C6191
100n
MIC3NR
FM_CMT(2:0)
RAPGSM

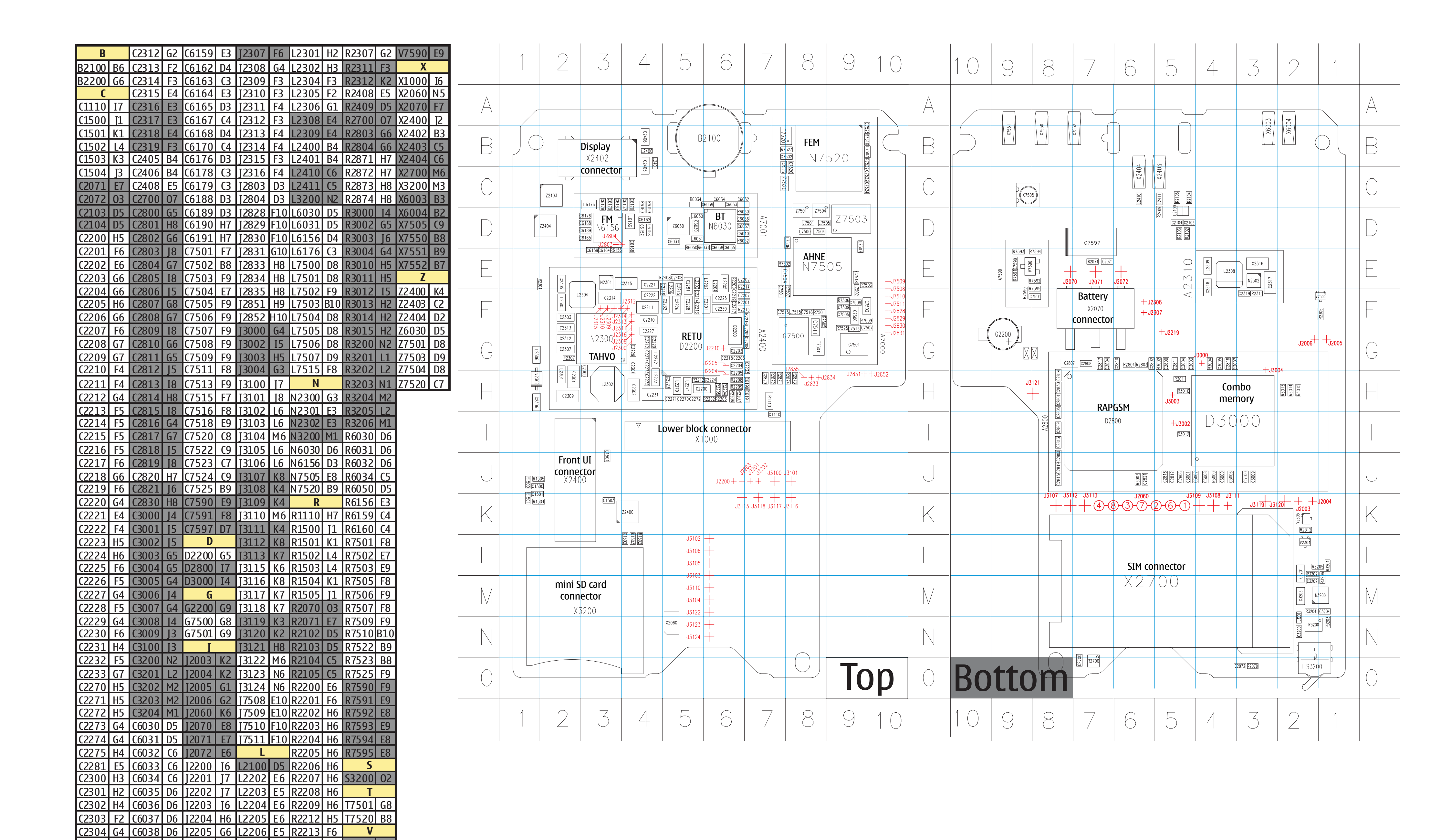

RAPGSM
LPRF_CMT(6:0)
PCM(3:0)
G_LPRF(23:0)
1.8V
VIO
R6030
10k
Bluetooth
N6030
BC4-ROM1.0RDL
Bluetooth antenna pads
X6003
X6004
ANT
Z6030
LFB2H2G44BB2A257
Unbal
DC
Bal
GND
2441.75MHz
C6031
18p
C6030
1p2
L6030
3n3H
L6031
3n3H
RAPGSM
RFCLKEXT_I(1:0)
SYSCLK
C6032
100p
8
RF_IN
TX_A
TX_B
AUX_DAC
XTAL_IN
PCM_OUT
PCM_IN
PCM_SYNC
PCM_CLK
UART_TX
UART_RX
UART_RTS
UART_CTS
BT_RESETX
RESETB
SPI_CSB
SPI_CLK
SPI_MOSI
SPI_MISO
TEST_EN
VSS_DIG
VSS_VCO
VSS_RADIO
VSS_ANA
PIO0
PIO1
PIO2
PIO3
PIO4
PIO5
PIO6
PIO7
PIO8
PIO9
AIO0
AIO2
VREG_EN
VREG_IN
VDD_ANA
SMP_IN
LX
SMP_COM
VDD_PIO
VDD_PADS
VDD_CORE
VDD_VCO
VDD_RADIO
UART_WAKE
UART_CTS_P
BT_WAKEUP
BTH_CLK_REQ
3.7V
VBAT
9
R6034
10k
R6031
10k
SLEEPCLK
PURX
PUSL(7:0)
RAPGSM
RETU
C6033
10n
C6034
10n
C6038
10n
1.8V
VIO
C6050
100k
R6032
2R2
C6035
10n
C6039
18p
C6036
10n
C6040
1u0
C6037
1u0
GND



Band	Channel	RX	VCO	TX	VCO
GSM 900	37	942.4MHz	3769.6MHz	897.4MHz	3589.6MHz
GSM 1800	700	1842.8MHz	3685.6MHz	1747.8MHz	3495.6MHz
GSM 1900	661	1960MHz	3920.0MHz	1880MHz	3760.0MHz



VAUX=2.8V
VIO=1.8V
VAUX=2.8V VIO=1.8V
VRCP2=4.75V VBAT=3.7V VREF=1.35V
VRCP1=4.75V
VBAT=3.7V
VDRAM=1.8V
VANA=2.5V
VAUX=2.8V
VR1=2.5V
VSIM1
VRFC=1.8V
VBAT=3.7V
VIO=1.8V
PURX=1.8V
VBAT=3.7V
VRFC=1.8V
VIO=1.8V
VDRAM=1.8V
VIO=1.8V
VDRAM=1.8V
VIO=1.8V
VMMC=2.8V



B		C2312	G2	C6159	E3	J2307	F6	L2301	H2	R2307	G2	V7590	E9
B2100	B6	C2313	F2	C6162	D4	J2308	G4	L2302	H3	R2311	F3	X	
B2200	G6	C2314	F3	C6163	C3	J2309	F3	L2304	F3	R2312	K2	X1000	I6
C		C2315	E4	C6164	E3	J2310	F3	L2305	F2	R2408	E5	X2060	N5
C1110	I7	C2316	E3	C6165	D3	J2311	F4	L2306	G1	R2409	D5	X2070	F7
C1500	J1	C2317	E3	C6167	C4	J2312	F3	L2308	E4	R2700	O7	X2400	J2
C1501	K1	C2318	E4	C6168	D4	J2313	F4	L2309	E4	R2803	G6	X2402	B3
C1502	L4	C2319	F3	C6170	C4	J2314	F4	L2400	B4	R2804	G6	X2403	C5
C1503	K3	C2405	B4	C6176	D3	J2315	F3	L2401	B4	R2871	H7	X2404	C6
C1504	J3	C2406	B4	C6178	C3	J2316	F4	L2410	C6	R2872	H7	X2700	M6
C2071	E7	C2408	E5	C6179	C3	J2803	D3	L2411	C5	R2873	H8	X3200	M3
C2072	O3	C2700	O7	C6188	D3	J2804	D3	L3200	N2	R2874	H8	X6003	B3
C2103	D5	C2800	G5	C6189	D3	J2828	F10	L6030	D5	R3000	J4	X6004	B2
C2104	D5	C2801	H8	C6190	H7	J2829	F10	L6031	D5	R3002	G5	X7505	C9
C2200	H5	C2802	G6	C6191	H7	J2830	F10	L6156	D4	R3003	J6	X7550	B8
C2201	F6	C2803	J8	C7501	F7	J2831	G10	L6176	C3	R3004	G4	X7551	B9
C2202	E6	C2804	G7	C7502	B8	J2833	H8	L7500	D8	R3010	H5	X7552	B7
C2203	G6	C2805	I8	C7503	F9	J2834	H8	L7501	D8	R3011	H5	Z	
C2204	G6	C2806	J5	C7504	E7	J2835	H8	L7502	F9	R3012	I5	Z2400	K4
C2205	H6	C2807	G8	C7505	F9	J2851	H9	L7503	B10	R3013	H2	Z2403	C2
C2206	G6	C2808	G7	C7506	F9	J2852	H10	L7504	D8	R3014	H2	Z2404	D2
C2207	F6	C2809	I8	C7507	F9	J3000	G4	L7505	D8	R3015	H2	Z6030	D5
C2208	G7	C2810	G6	C7508	F9	J3002	I5	L7506	D8	R3200	N2	Z7501	D8
C2209	G7	C2811	G5	C7509	F9	J3003	H5	L7507	D9	R3201	L1	Z7503	D9
C2210	F4	C2812	J5	C7511	F8	J3004	G3	L7515	F8	R3202	L2	Z7504	D8
C2211	F4	C2813	I8	C7513	F9	J3100	J7	N		R3203	N1	Z7520	C7
C2212	G4	C2814	H8	C7515	F7	J3101	J8	N2300	G3	R3204	M2		
C2213	F5	C2815	J8	C7516	F8	J3102	L6	N2301	E3	R3205	L2		
C2214	F5	C2816	G4	C7518	E9	J3103	L6	N2302	E3	R3206	M1		
C2215	F5	C2817	G7	C7520	C8	J3104	M6	N3200	M1	R6030	D6		
C2216	F5	C2818	J5	C7522	C9	J3105	L6	N6030	D6	R6031	D6		
C2217	F6	C2819	J8	C7523	C7	J3106	L6	N6156	D3	R6032	D6		
C2218	G6	C2820	H7	C7524	C9	J3107	K8	N7505	E8	R6034	C5		
C2219	F6	C2821	J6	C7525	B9	J3108	K4	N7520	B9	R6050	D5		
C2220	G4	C2830	H8	C7590	E9	J3109	K4	R		R6156	E3		
C2221	E4	C3000	J4	C7591	F8	J3110	M6	R1110	H7	R6159	C4		
C2222	F4	C3001	J5	C7597	D7	J3111	K4	R1500	J1	R6160	C4		
C2223	H5	C3002	J5	D		J3112	K8	R1501	K1	R7501	F8		
C2224	H6	C3003	G5	D2200	G5	J3113	K7	R1502	L4	R7502	E7		
C2225	F6	C3004	G5	D2800	I7	J3115	K6	R1503	L4	R7503	E9		
C2226	F5	C3005	G4	D3000	I4	J3116	K8	R1504	K1	R7505	F8		
C2227	G4	C3006	J4	G		J3117	K7	R1505	J1	R7506	F9		
C2228	F5	C3007	G4	G2200	G9	J3118	K7	R2070	O3	R7507	F8		
C2229	G4	C3008	J4	G7500	G8	J3119	K3	R2071	E7	R7509	F9		
C2230	F6	C3009	J3	G7501	G9	J3120	K2	R2102	D5	R7510	B10		
C2231	H4	C3100	J3	J		J3121	H8	R2103	D5	R7522	B9		
C2232	F5	C3200	N2	J2003	K2	J3122	M6	R2104	C5	R7523	B8		
C2233	G7	C3201	L2	J2004	K2	J3123	N6	R2105	C5	R7525	F9		
C2270	H5	C3202	M2	J2005	G1	J3124	N6	R2200	E6	R7590	F9		
C2271	H5	C3203	M2	J2006	G2	J7508	E10	R2201	F6	R7591	E9		
C2272	H5	C3204	M1	J2060	K6	J7509	E10	R2202	H6	R7592	E8		
C2273	G4	C6030	D5	J2070	E8	J7510	F10	R2203	H6	R7593	E9		
C2274	G4	C6031	D5	J2071	E7	J7511	F10	R2204	H6	R7594	E8		
C2275	H4	C6032	C6	J2072	E6	L		R2205	H6	R7595	E8		
C2281	E5	C6033	C6	J2200	J6	L2100	D5	R2206	H6	S			
C2300	H3	C6034	C6	J2201	J7	L2202	E6	R2207	H6	S3200	O2		
C2301	H2	C6035	D6	J2202	J7	L2203	E5	R2208	H6	T			
C2302	H4	C6036	D6	J2203	J6	L2204	E6	R2209	H6	T7501	G8		
C2303	F2	C6037	D6	J2204	H6	L2205	E6	R2212	H5	T7520	B8		
C2304	G4	C6038	D6	J2205	G6	L2206	E5	R2213	F6	V			
C2305	E2	C6039	C6	J2210	G6	L2270	H5	R2214	E6	V2300	F1		
C2306	H1	C6040	D6	J2219	G5	L2271	H5	R2216	F7	V2302	H1		
C2307	G2	C6157	D4	J2300	G4	L2272	G4	R2304	E2	V2304	L2		
C2309	H2	C6158	D4	J2306	F6	L2273	H4	R2305	F1	V2305	K2		